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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,064	04/28/2005	Hironaga Hongawa	1391.1067	5355

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EXAMINER

WONG, JOSEPH S

ART UNIT	PAPER NUMBER
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2852

DATE MAILED: 12/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/533,064

Applicant(s)

HONGAWA ET AL.

Examiner

Joseph S. Wong

Art Unit

2852

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,3-5 and 7-12 is/are rejected.
- 7) ☒ Claim(s) 2 and 6 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 April 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/28/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "printing-medium-heating means" of claim 9 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

Claim 1 is objected to because of the following informalities: Regarding the carrier-agent-removing means in which the carrier-agent-removing means surface is moved in a direction opposite a moving direction of the toner image, it is unclear in the claim which direction is meant by opposite. In the applicants figure 1, both the surface of item 7 and the moving direction of item 3 are moving in a counterclockwise direction. Appropriate correction is required.

Claims 2 and 6 are objected to as being dependent upon a rejected base claim.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 7 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. A portion of the claim reads that “a pressure to be applied between the image-bearing member and a backup roller is set to 0.5 MPa to 4.0 MPa.” The specification indicates in paragraph 7 that excessively high pressure in the course of transfer can lead to the problem of “shock marks”. Evidence that claim 7 fails to particularly point out and distinctly claim the subject matter which applicant(s) regard as the invention is based upon review of Ichida et al. (US 2004/0175208) which includes one or more common applicants with the present application, in which it is indicated in paragraph 12 that the problem of “shock marks” becomes present when the transfer pressure between the image-bearing member and a back up roller is “extremely high (1 MPa or higher)”. Over 85% of applicant’s claimed transfer pressure range falls within a range which has previously been deemed by one or more of the applicants to be “extremely high” and prone to the problem of “shock marks” which hinder printing with high image quality.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 2852

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Sakai et al. (US 6898404).

With respect to claim 1, Sakai teaches a liquid development electrophotographic apparatus in which a toner image formed by developing a formed electrostatic latent image by use of a nonvolatile liquid developer is transferred from an image-bearing member onto a printing medium by a melt transfer process (as described in column 4, lines 30 – 35 where the toner is melted by increasing the temperature of the toner image to a temperature which is higher than the resin softening temperature), comprising: control means for controlling a viscoelasticity of a toner image on the image-bearing member by bonding toner particles of the toner image together by means of partially melting the toner particles (as described in column 4, lines 30 – 35 where the toner particles are bonded by partially melting the toner particles by increasing the temperature of the toner image to a temperature which is higher than the resin softening temperature), so as to cause the liquid toner to enter a softened condition having a carrier agent in inter-bonded-toner-particle spacing, the control means (as described by the control unit in column 4 line 37) causing the bonded toner particles to be separated from the carrier agent without causing the toner particles to be melted to such an extent as to be liquefied by maintaining the temperature of the toner at a temperature which is higher than the softening temperature; and carrier-agent-removing means for removing the agent from the viscoelasticity-controlled toner image, the carrier-agent-removing means having a surface in contact with the carrier agent caused to float by use of

electric field force, and removing the carrier agent by moving the surface in a direction opposite a moving direction of the toner image as described in column 4, lines 38- 48 and shown in figure 5 by the reverse-rotating conductive collection roller.

With respect to claim 3, Sakai teaches the liquid-development electrophotographic apparatus according to claim 1 as described above, further comprising heating means for heating the toner image formed on the image bearing member as shown in fig. 5 by the heater, wherein the viscoelasticity of the toner image is controlled in such a manner that the heating means heats the toner image to a temperature at which the toner image exhibits a target dynamic viscoelastic value, which is determined on the basis of a previously measured relationship between heating temperature and the dynamic viscoelasticity of toner particles contained in the liquid developer to be used as described in column 4, lines 30 –45 where viscoelasticity of the toner image is controlled by the controller by maintaining the toner temperature at a target dynamic viscoelastic value which is a previously measured temperature which is higher than the softening temperature of the toner which is the target dynamic viscoelastic value.

With respect to claim 4, Sakai teaches the liquid-development electrophotographic apparatus according to claim 3 as described above, wherein, when the toner image is heated, a temperature of the image-bearing member is controlled to a temperature lower than a boiling point of the carrier agent as described in column 4, lines 30 – 45 where the temperature of the image bearing member is maintained such

that it is near the softening temperature of the resin, which is well below the boiling point of the carrier agent.

With respect to claim 5, Sakai teaches the liquid-development electrophotographic apparatus according to claim 1 as described above, wherein the carrier-agent-removing means is provided on the image-bearing member at a position located immediately before a position of transfer onto the printing medium as shown in fig. 5 where the reverse-rotating conductive collection roller is located immediately before the transfer position; bias voltage is applied to the carrier-agent-removing means to thereby move charged toner particles of the toner image present on the image-bearing body and softened by the viscoelasticity control means toward the image-bearing body, to thereby cause the carrier agent to float on the charged toner particles and the floating carrier agent is removed as described in column 4 in lines 55 – 65 where a bias voltage is applied to press toner against a toner-image-bearing body to thereby cause the carrier agent to float on the charged toner particles and the floating carrier agent is removed by the carrier-removing unit.

With respect to claim 8, Sakai teaches the liquid-development electrophotographic apparatus according to claim 1 as described above further comprising a plurality of removing means for removing the carrier agent each time a toner image in each of a plurality of colors for color printing is transferred onto the image-bearing member, wherein the removing means move in the same direction as a moving direction of the toner images on the image-bearing member as shown in fig. 2 by items 15.

With respect to claims 10 and 11, Sakai teaches the liquid-development electrophotographic apparatus according to claim 1 as described above, further comprising means for applying bias voltage in such a manner that electric field force acts on the toner image in such a direction as to cause the toner image to move toward the printing medium in the course of transfer of the toner image onto the printing medium; wherein the means for applying the bias voltage applies the bias voltage between the image-bearing member and a backup roller; and the resistance of the image-bearing member is set to $1.0E7$ Ohm to $1.0E10$ Ohm as described in column 7 lines 34-40 and in column 9, lines 15-22.

With respect to claim 12, Sakai teaches the liquid-development electrophotographic apparatus according to claim 1 as described above wherein a rubber material is used to form an outermost surface of the image-bearing member from which the toner image is transferred onto the printing medium as described in column 9, lines 55 – 65.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical

Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claim 9 is rejected under 35 U.S.C. 102(e) as being anticipated by Ichida et al. (US 2004/0175208).

Ichida teaches a liquid development electrophotographic apparatus in which a toner image formed by developing a formed electrostatic latent image by use of a nonvolatile liquid developer is transferred from an image-bearing member onto a printing medium by a melt transfer process as described in paragraphs 25-30, comprising: control means for controlling a viscoelasticity of a toner image on the image-bearing member by bonding toner particles of the toner image together by means of partially melting the toner particles as described in paragraph 106 where the temperature of the image bearing member is higher than the softening temperature of the toner, so as to cause the liquid toner to enter a softened condition having a carrier agent in inter-bonded-toner-particle spacing, the control means causing the bonded toner particles to be separated from the carrier agent without causing the toner particles to be melted to such an extent as to be liquefied; and carrier-agent-removing means for removing the carrier agent from the viscoelasticity-controlled toner image, the carrier-agent-removing means having a surface in contact with the carrier agent caused to float by use of electric field force, and removing the carrier agent by moving the surface in a direction opposite a moving direction of the toner image as shown in fig. 15 by the

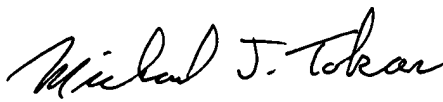
carrier-removing roller, further comprising printing-medium-heating means for preheating the printing medium to a temperature equal to or higher than a temperature of the image-bearing member before transfer of the toner image onto the printing medium as shown in fig. 1 by the preheating unit and described in paragraph 106 where the temperature of the printing medium is higher than the temperature of the image-bearing member.

Remarks

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph S. Wong whose telephone number is (571)272-8457. The examiner can normally be reached on Monday - Friday 9:00 - 5:30.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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12/15/05


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